

Abstract

The inventive method for evaluating an X protein encoded by an *Lactobacillus fermentum* (*L. fermentum*) *ntd* gene in such a way that the characteristics thereof are modified consists a) in obtaining the *Lactobacillus fermentum* (*L. fermentum*) *ntd* gene mutants by random mutagenesis, b) in transforming cells containing a [P-] phenotype provided with vectors containing mutated nucleic acids obtained at the stage a) coding for the thus modified X* proteins, wherein P- means that said cells are auxotrophic for a substance P produced by the action of X on a natural substrate S, c) in culturing said cells in a medium comprising a substrate S*, wherein S* is an analog to the natural substrate S of the protein X and d) in selecting the cells [P-::X*] which survived at the stage c) and in which the proteins X* are capable of carrying out the biosynthesis of the product P based on the substrate S*. The mutated *L. fermentum* N-desoxyribosyl transferases have an N-didesoxyribosyl transferase activity, corresponding nucleic acids, expression vectors, host cells containing said vectors and an application for the enzymatic synthesis of 2',3'-didesoxynucleosides and 2',3'-didehydro-2',3'-didesoxynucleosides.